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THE PRODUCTION OF ELECTRIC POWER IN THE SOVIET ZONE OF GERMANY

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Introduction

The serious bottleneck in the production of electric power in the Soviet Zone has not been sufficiently overcome during the economic development of recent years to keep pace with the increasing requirements. Therefore, the resolutions of the second party conference of the SED (Socialist Unity Party) stress the need for a forced increase in the production of power, since the tempo of industrial production and also supplies for the population depend upon an increase in power production. On 21 September 1952 at the power meeting in Halle, Heinrich Rau, Deputy Minister-President stated:

"The most important mission of the state in carrying out the Five-Year Plan and in setting up a socialist economy is the rapid increase in the production of electric power."

In November 1952 Wilhelm Pieck said: "We need new and modern power plants. However, to be able to construct them we must first develop such basic industries as mining, metallurgy, and heavy machine-building. Hence,

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it is extremely important that all available power plants in the Republic be fully utilized in order to ensure industry, agriculture, transportation, trade, and domestic consumers an adequate supply of current."

The following report has been prepared from abundant official material from the State Planning Commission, the State Secretariat for Coal and Power, and other reliable sources of information. The report has been limited to a description of the present situation and to the development of the industry during the current Five-Year Plan (1951-1955). Information on previous developments and on the scope and effects of the dismantlings /following World War II/ is available in Annex I.

Organization

All plants and enterprises of the electric power industry in the Soviet Zone have been nationalized. However, many of these plants, especially the large enterprises, were formerly publicly owned. Only a small number of privately owned factories and businesses have control over small power-producing installations which supply current for their own needs.

The plants supplying electricity for the public are centrally controlled and administered by the Main Department for Power in the State Secretariat for Coal and Power. The State Secretary for Coal and Power is Fritsch; the director of the Main Administration for Power is Adler. In addition, there are still a large number of small enterprises, especially current distribution enterprises, which are temporarily still under local ownership. A regulation of the power industry, dated 22 June 1949, states that these enterprises will eventually be taken over by the zonal administration. When this happens the communities will be deprived of the profits they have been drawing from the sale of current. In this manner a unified rate policy is to be made possible for the entire Soviet Zone. In addition to the public power plants, there are a large number of power plants owned by industries. These plants supply their own needs and only the surplus current is delivered to the public network. These plants are under the supervision of special ministries and state secretariats.

As of May 1952, there were 18 Soviet-owned power plants which played an important part in the production of power. The total capacity of these SAGs (Soviet Corporations) was about 1,420 megawatts. Through the restitution act of May /1952/ this figure was considerably decreased. Almost all the coal mines and some of the important large chemical enterprises were transferred to the people-owned sector of the economy.

Annex II shows the number of power plants in the Soviet Zone, the installed capacity of each plant, and the distribution of the plants among the Laender of the Soviet Zone.

The plants subordinate to the Main Administration for Power in the State Secretariat for Coal and Power are distributed among five power districts (designated according to the Soviet pattern), which have the status of VVBs (Administrations of People-Owned Enterprises). Annex IV consists of a list of these districts and the principal areas which they serve. The power districts are further subdivided into plant managements (see Annex VI).

The electric power industry also has its own repair plants, which are administered directly by the Main Administration for Power in the State Secretariat for Coal and Power. Annex VII contains a list of these repair plants.

Also of particular importance is the Central Design Office for the Electrical Industry, which was founded in 1949. The director of the Central Design Office for the Electrical Industry is Lewien; the main designer of turbines is Dipl Ing Kusy. This office is located at the EKM Bergmann-Borsig plant in Berlin-Wilhelmsruh and is administered by the director of the Main Administration for Power in the State Secretariat for Coal and Power.

The Production of Electric Power

It is well known that the supply of electric power in the Soviet Zone is dependent upon production capacity and that the distribution network is not capable of fulfilling the needs of industry and of the population at all times and all places. The Soviet Zone authorities admit that there is need for the strictest control over the allocation of current and over planned or nonplanned power cut-offs, especially during peak load periods. The Soviet Zone press reiterates this theme daily and calls upon industrial installations and the population to cut consumption during these peak periods. Moreover, meetings of top officials in the Soviet Zone have been held for the purpose of discussing the critical power shortages. At the last such meeting, held at Halle 21 September 1952, Heinrich Rau discussed this matter at great length.

Annex 2 indicates that the Soviet Zone production of electric power in kilowatt-hours increased steadily after 1945. In fact, the planned production for 1951 was slightly exceeded. Available information indicates that the 1952 plan will not be fulfilled. The fact that actual production during the first two years was equal to planned production does not mean that requirements were actually covered, especially during the peak load periods. It is evident that the planned production figures for electric power in kilowatt-hours were determined on the basis of production capacity, not on the actual needs of the consumers, which are considerably higher than the planned figures. This mistake can be attributed to the fact that the capacities of the power plants could not be exceeded and the so-called "power consumption norms" of the consumers were too low. This fact was confirmed by Heinrich Rau in a speech before the Soviet Zone Volkskammer (People's Chamber) in March 1952. The following quotation is taken from that speech:

"Since no exact balance has been established between production figures for the Five-Year Plan and the present and future capacities for attaining these figures, it is apparent that balancing methods have not been sufficiently developed. The absence of this balance reflects the lack of qualified personnel in the individual ministries."

It is evident from this admission of Deputy Minister-President Rau that the same mistake was made in setting up the Five-Year Plan, since the planned increase for the production of electric power is not in proportion to the development of the principal consumer industries. The Five-Year Plan law, of 1 November 1951, states that the production of electric power in 1955 is to show an increase of 176.8 percent over the 1950 production. The following percentage increases have been planned for the most important consumer industries for the same period:

	1955
Total industrial production	253.6%
Metallurgy	214.8%
Machine building	189.3%
Electrical engineering	204.4%
Chemical industry	183.7%
Textile industry	199.6%
Light industry	193%
Sulfuric acid	646%
Soda ash	204%
Gasoline	287.9%
Cement	

In order to balance this disproportion between production and requirements it will be necessary to make some revisions by the end of the Five-Year Plan period. Either the production of electric power will have to be increased or the consumption will have to be reduced; in the latter case, however, the planned goals of the consumer industries will be endangered. Annex III shows the distribution of electric power to the individual consumer industries in 1952.

The Five-Year Plan law states the following concerning the problem of maintaining the current supply in the Soviet Zone: "In order to solve this problem it is necessary to utilize fully all the existing capacities of the electric power industry and to create new capacities. In the course of the Five-Year Plan, the disproportions between boiler and turbine installations must be eliminated by the reconstruction of existing boiler aggregates and the construction of new boiler installations; moreover, all hydroelectric and pumping plants must be completely overhauled. The most important prerequisite for fulfilling the increasing electric power requirements of the economy is the strictest economy in the consumption of current by the consumers and electric power plants."

In this connection the following measures have been drawn up:

1. Increase in production capacities by general overhauling and reconstruction of existing installations; construction of new power plants; and appropriation of surplus current from industrial plants and the feeding of this current into the public network.

2. Reconstruction, expansion, and consolidation of the power supply network covering the entire Soviet Zone.

3. Restrictive measures designed to reduce the consumption of current by means of allocations and by lowering the current consumption norms.

Power Plants

Electric power is produced in the Soviet Zone almost exclusively in steam power plants. The small number of diesel and hydroelectric plants are of little importance. The large resources of brown coal in the Soviet Zone are the most important source of electric power. Of the 21.5 billion kilowatt-hours produced in 1939, 13 percent was produced by power plants operating on black coal, 2.3 percent by hydroelectric plants, and 84.7 percent by plants operating on brown coal. As a result of the shortage of black coal, plants formerly operating on black coal have now been converted to brown coal. In 1951, electric power plants consumed 43,580,000 tons of crude brown coal, 3,570,000 tons of brown-coal briquettes, and 2,240,000 tons of brown-coal low-temperature coke. The production of electric power for public consumption depends mainly on the large power plants which were constructed to operate with coal, and also on a large number of smaller plants of local importance. In addition, industry, particularly the coal-mining industry, controls a considerable number of plants for supplying their own needs. Public plants accounted for 38 percent of the total power production in 1936 and 47 percent of the total in 1948. The latter figure includes the production of the SAG Espenhain Power Plant. On the other hand, private plants produced 42 percent of the total power production in 1936 and 53 percent of the total in 1948. The percentage figure for 1948 includes the remaining SAG power plants. The difference between the two years is due to the fact that plants producing power for public consumption were affected more by dismantlings. No basic changes have occurred since 1948 because the reconstruction of public power plants after 1948 was accompanied by a corresponding increase in the utilization of private installations.

The Soviet Zone officials have ordered that all available installations be fully utilized and that the surplus current of private installations be made available for public consumption. However, technical and economic reasons have made it difficult to bring about the full utilization of private installations.

Industrial power plants operate almost exclusively as back-pressure plants, because the exhaust steam from the turbines is needed for various manufacturing processes such as the production of briquettes. Therefore, the production of electric power is to a great extent dependent upon the quantity of exhaust steam required at certain times of the day and at certain operating periods. Moreover, the production costs for current in back-pressure plants are lower than in condensation plants. The SAG power plants have up to now opposed the uneconomical full utilization of capacities. However, the crisis in the supply of electric power has now forced these plants to utilize their capacities fully in accordance with the demands of the Soviet officials. Even very small power plants, which hitherto have been idle, have been put into operation again and are supplying current for the network. This is particularly true in the case of hydroelectric stations and steam power plants which were put out of operations for economic reasons. These small plants are to be given a preliminary inspection to determine whether it would be more advantageous to install the idle machinery and materials in larger power plants. In summer 1952, the Main Administration for Power of the State Secretariat for Coal and Power conducted a careful inspection of these plants and reported that the total capacity of idle installations was 328 megawatts. This equipment was found principally in plants of the textile industry. By the beginning of December 1952, equipment with a capacity of 54 megawatts had been overhauled, repaired, and put into operation. The fact that many of these small installations were obtained from the textile industry proves that the installations are old, out-of-date, and uneconomic. This emergency action indicates that, in the planned economy of the Soviet Zone, economic considerations must be disregarded in favor of definite production goals. Annex V contains a list of the most important power plants and their installed capacities.

The available installations are forced to operate at full capacity as if they were new. Repairs are carried out hastily unless longer breakdowns are occasioned by shortages of spare parts. General repairs to equipment are continually postponed until the machinery or parts of installations break down. While in 1936 the average length of time that installations were in use was 3,000-3,500 hours yearly, the 1951 average was 5,600-5,700 hours yearly. This meant that some installations had to be operated up to 6,500 hours in order to achieve this yearly average. Soviet Zone officials hesitate to continue this overloading, and they are requesting a reduction in the operating time to 5,000 hours yearly. This figure is still 25 percent above the normal operating time for modern installations, which is 4,000 hours yearly. However, most of the installations in the Soviet Zone are old, out-dated, and uneconomical to operate. Any reduction in the operating time of installations must not result in a decrease in the planned output. This means that new capacities must be created by the beginning of 1955 so that the installed capacity of the power plants will be large enough to produce 33,414,000,000 kilowatt-hours during an operating period of 5,000 hours. The 1955 power plant capacities listed in Annex I, but not mentioned in the Five-Year Plan, were considered to be the minimum necessary to reach this goal.

In order to attain this increase in capacity, almost all the large power plants in the Soviet Zone are to be reconstructed. Mainly steam-generating installations are to be reconstructed, in order to eliminate the disproportion which till now has existed between the boiler capacity and machine capacity and to utilize fully the machine capacity.

Moreover, certain changes have been planned, which are designed to create efficient installations. For example, plans call for the transfer of equipment from the Harbke power plant, which has operated on black coal from West Germany, to other plants. This action is especially necessary since the breakdown of the Harbke plant has necessitated the construction of a new power plant in West Germany. /Harbke formerly exported power to West Germany./ Several new steam power plants are to be built for supplying the public with current. The reconstruction of the completely dismantled Elbe Power Plant in Vockerode has been started. This project is to be completed by 1954 at the latest; with a capacity of about 300 megawatts, the Elbe Power Plant will be the largest and most modern power plant in the Soviet Zone, in fact, in all of Germany. The Trattendorf and Berzdorf projects will be started in 1953; on completion, the Trattendorf plant will have a capacity of 450 megawatts and the Berzdorf plant will have a capacity of 150 megawatts. In addition, the construction of a large power plant which will operate on salt coal is planned for Geiseta1 near Halle; the technical prerequisites for such a plant exist, and are to be tested. The plant will use coal from the Merseburg district with a salt content of 60 percent.

New industrial power plants are also under construction; for example, a 20-megawatt plant for the Lauchhammer Large-Scale Coking Plant, a 20-megawatt plant for the Calbe Metallurgical Combine, and a 40-megawatt plant for the East Metallurgical Combine in Fuerstenberg. The Fuerstenberg power plant will also supply current for the "first socialist city in the Soviet Zone," which is being built at that location.

In comparison with the new steam power plants, the new hydroelectric stations will be of lesser importance. On 1 September 1952, the foundation stone was laid for the Rappbode dam, which will have a storage capacity of 110 million cubic meters and will be the largest of the 11 dams planned for construction in the Harz. The main purpose of this dam will be to supply water, but it will also supply water power to the 20-megawatt "peak" power plant /i.e., a plant to operate at peak periods only/ to be constructed at Thale. However, the completion date of this project cannot yet be determined. More than 200,000 tons of cement will be needed for the construction of this dam; this figure is more than 12 percent of the total production of cement planned for the year ---- /illegible/.

The Distribution Network

The network and the switch and transformer stations had suffered considerable losses as a result of the dismantlings after 1945. However, the plan of the Main Administration for Power to construct a consolidated network covering the entire Soviet Zone will be facilitated by the centralization of the power industry. All power-producing plants are to be connected to the network; this includes not only the public power plants but also the industrial power plants.

The high-tension network of the Soviet Zone was built according to the consolidated requirements of an all-German economy without regard to zonal borders and the Oder-Neisse line. The high-tension network operates on voltages of 220, 110, and 40-60 kilovolts. The 220-kilovolt line belongs to the power-pool circuit covering all of Germany and passes through the Soviet Zone from Helmstedt by way of Magdeburg, Dieskau, and Remptendorf to Bavaria. Since the connection with West Germany is at present cut off, part of the line in the Soviet Zone is being operated with 110 kilovolts.

The 110-kilovolt network covers the entire Soviet Zone and together with the 220-kilovolt network it serves as a connecting line for power plants operating as power pool. There are sections of the network with operating voltages of 40-60 kilovolts for the transmission of small and medium power

capacities over relatively short distances. In recent years, a number of new 110-kilovolt lines have been put up for purposes of increasing armaments production. For example, two new high-tension lines have been set up from the large power plants at Boehlen and Espenhain near Leipzig to the Erzgegirge to supply the uranium mines of the Wismut Corporation. Also, a 110-kilovolt line between Greifswald and Stralsund was put into operation and at the same time the operating voltage of the line from Stralsund to Bergen, on the island of Ruegen, was increased from 15 to 50 kilovolts. The 110-kilovolt line connecting Greifswald with Peenemuende serves to connect the rocket-testing station at Peenemuende with the high-tension network. The 110-kilovolt line running from Stralsund to Rostock is to be extended to Guestrow, where it will be connected to the high-tension network extending from Guestrow to Perleberg and Magdeburg. Thus Mecklenburg, with its shipyards, harbors, and Soviet and East German naval bases, will be connected to the large Soviet Zone high-tension network.

Another important project is the 110-kilovolt closed circuit system around Berlin. The transformer station was formerly located in Spandau, in the British sector of Berlin, and was later moved to Soviet territory. The northern part of the system and the terminal station have been completed; the terminal station will connect the Klingenberg and Rummelsburg power stations in the Soviet sector with the system. The southern part of the system, by-passing the western sectors of Berlin, has not yet been completed.

The medium-tension network, which has an operating voltage of between 5 and 20 kilovolts, connects individual cities and communities as well as large industrial installations.

The low-tension network, which supplies current to medium-size and small consumers, operates mostly on a standard voltage of 380 volts. There are only small sections of the distribution network operating on 220 and 110 volts alternating current. There are also a few isolated direct current networks operating on 220 and 110 volts.

As far as the technical aspects are concerned, the high-tension network can still be considered satisfactory. However, the condition of the medium-tension network is extremely poor. The replacement of the iron cables which were laid before the war is urgently needed. In addition, the switch and transformer installations are quantitatively and qualitatively unsatisfactory. There are even shortages of current meters and industrial and household equipment. The cross-sectional area of the lines must also be increased in order to be able to carry the constantly increasing quantities of power.

The replacement and maintenance projects and the construction of new network sections are continuing; however, the carrying out of these projects is hindered considerably by shortages of materials. The principal bottlenecks are steel and impregnated wood for towers for overhead transmission lines; copper, aluminum, and iron cable; transformers; and switching installations.

Line connections between the Soviet Zone and the Federal Republic of Germany are open only occasionally; the following is a list of these connections: 220-kilovolt connection, Helmstedt - Central Germany - Bavaria (Harbke - Dieskau - Remptendorf); 110-kilovolt connections, East Hannover Power Plant (British Zone) - Hagenow - Hennigsdorf - Spandau (British Sector of Berlin), Land Hessen (US Zone) - Breitungen Power Plant (Soviet Zone), Magdeburg - Spandau, Zschornewitz - Spandau, Vockhaus - Hof (US Zone); 30-kilovolt connection, Luebeck - Schoenberg - Wismar; and 15-kilovolt connection, Land Brandenburg - Gatow (army air field) - Bewag.

The high-tension lines from the Soviet Zone to areas beyond the Oder-Neisse line, now under Polish administration, have been almost completely dismantled. A connection with the Swinemuende transformer substation still exists; this line serves the island of Usedom and the city of Swinemuende, and supplies current for the coastal and harbor lights and for Soviet naval base. The Soviet Zone power plant at Hirschfelde, which obtains its supply of coal from Poland, also delivers power to Silesia. In addition, there are a few connecting lines of local importance only; these lines deliver only a small amount of current from the Soviet Zone. The Soviet Zone also transmits electric power to Czechoslovakia. The Hirschfelde Power Plant sends current to northern Bohemia. Moreover, the power plants in Bruex /Most/, Teplitz /Teplice/, and Falkenau /Sokolov/ on the Czechoslovak side of the Erzgebirge are not capable of meeting the increased requirements of the Czechoslovak uranium mining industry, which, therefore, must obtain power from Chemnitz and Aue.

The Power Quota System and Load Dispatching

Annex III shows the 1952 consumption of power in the Soviet Zone by the individual authorized consumer industries. The discrepancy between power production on the one hand and actual requirements of power on the other will become even greater during the course of the Five-Year Plan The Soviet Zone officials are completely aware of the extent of this discrepancy. According to the Five-Year Plan law, of 1 November 1951, the most important prerequisite for insuring a satisfactory supply of power is the strictest economy in the use of current by consumers and electric power plants. The measures to be taken in this connection are to be found in various regulations and directives.

The principal measure is the allocation and control of the consumption of power, as well as the shifting of consumption from peak periods to night and slow periods during the day and to Sundays and holidays. The State Secretariat for Coal and Power has ordered that the usual power requirements for peak load periods must be reduced by at least 30 percent during the winter of 1952 - 1953. Newspapers publish a daily list of these periods. Plants operating on one and two shifts must satisfy 50 percent of their requirements during the period 2130-0615 hours. Plants operating on three shifts will be allowed to receive as much as one third of their requirements between 1400 and 2200 hours, but they must obtain at least one third between 2200 and 0600 hours. Agricultural installations are not permitted to use electric power between 0600 and 1300 hours or from a half hour before sunset until 2200 hours. The supply of power for the civilian population is severely curtailed by planned and nonplanned cut-offs during peak periods and during the evening hours.

However, in spite of this regulation concerning the allocation of current, overloading cannot be avoided by means of planned cut-offs. Hence, an organization of load dispatchers has been formed in the Soviet Zone which is subordinate to the Main Administration for Power. The main load dispatcher in Berlin is concerned with allocations to the new districts (Bezirke) created in 1952; in turn the Bezirk load dispatchers make allocations to the Kreise, cities, and communities; the latter then make allocations directly to the consumers. The load dispatchers are authorized to make nonplanned cut-offs to maintain the frequency and voltage and whenever it appears that the network is becoming overloaded.

Other measures designed to bring about a reduction in the consumption of power are: 1) limiting the kilowatt-hours of power consumed by lowering the power-consumption norms of certain manufacturing processes; 2) rational use of power, i.e., adapting the power of motors to the power requirements

of machinery by transferring motors within the plants and between plants; 3) avoidance of losses due to the idle running of machinery; 4) full compensation for wattless current; 5) replacement of transmissions by single drives; 6) elimination of unnecessary lighting and the use of electricity for heating purposes.

According to law, all plants must have specially trained power engineers who are charged with supervising the execution of these measures and with the development of additional economy measures. The execution of these measures and the observance of regulations are currently under the control of supervisory groups of the state, the trade union, and the SKD. Nonobservance of these measures will result in severe penalties.

Labor Force

At the beginning of December 1952, the number of workers in the electric power industry totaled 30,125. This figure includes all persons employed in an active capacity in the electric power industry.

After 1945, the experienced specialists of the interregional power supply enterprise were available for the newly organized power districts. As Annex IV shows, the supply districts of this enterprise corresponded approximately to the newly created power districts. In the meantime, the situation has become extremely difficult, since many of the specialists have fled to the West. It was impossible for them to bear the responsibility for the precarious situation in the electric power industry which was placed upon them by the Communist regime and the Soviet officials, since they had not been informed of the actual difficulties involved.

It is a characteristic of the Communist system not to recognize objective difficulties under any circumstances but to place the blame for failures in the planned economy on the officials concerned with the situation. Since it is not possible to obtain sufficient materials, attempts are being made to increase production by the exploitation of human beings. This is being accomplished by the so-called activist movement and brigade work. The plant competitions, which are constantly conducted, closely resemble a slave system. At present, a competition campaign is being conducted among 15 of the largest power plants in the Soviet Zone. [Six lines completely illegible.]

In each of the Soviet Zone districts, campaign plans to improve the supply of power are being drawn up; instead of solving the problem, these plans will simply mean the increased exploitation of human labor. The Leipzig district drew up the first campaign plan listing the following measures:

1. New sources of power must be discovered.

2. Network losses must be made lower than the standards set up in the plan for people-owned enterprises.

3. Every industrial plant must set up and carry out its own plan for economizing on the consumption of power.

4. Interplant cooperation must be established for carrying out repair work in industrial power installations.

5. All domestic consumers must be united in their efforts to economize on current consumption.

Special brigades, under the supervision of the Bezirk load dispatcher, have been established to carry out these objectives.

Power Equipment Industry

The electric power industry is obligated to maintain the present production level. For this purpose, considerable replacement and maintenance requirements have been placed upon all branches of industry. Losses which occurred during the war must be replaced. In addition, it is necessary to increase capacities in order to carry out the planned production increases by 1955.

The carrying out of these measures requires a competent industry for the supply of equipment. At present such an industry does not exist in the Soviet Zone. Formerly, German power plants, including those now under Soviet control, received supplies of turbosets and steam boilers predominantly from West German heavy industry; however, this situation no longer exists.

In 1949 the Central Design Office of the electric power industry was established. This office, which is directly under the Main Administration for Power, is located in Berlin-Wilhelmsruh at the Bergmann-Borsig plant. The duties of this office are extremely important. It maintains constant supervision over repair work and competence of the plants. It also takes care of the procurement of replacement parts, mainly from West German firms. When designs for various machinery parts are not available, the Central Design Office produces the designs and arranges to have the parts made in the Soviet Zone. This central control and coordination of repair work naturally has many advantages. Another duty of the Central Design Office is to examine the possibilities for introducing changes which will serve to strengthen the capacity of the installations.

The Central Design Office is also charged with drawing up plans for new power plants; as a basis for this work, the office makes use of the preliminary plans for the so-called "German Standard Power Plants" which were begun during the war. This work involves the setting up of definite type designations and the designing of power plant equipment, such as boiler installations, steam turbines, generators, pumps, etc., in order to bring about a standardization of power plants.

There are a number of repair shops for the power industry (see Annex VII); these shops are directly under the Main Administration for Power and they work closely with the Central Design Office. Furthermore, the Central Design Office is in close contact with plants supplying equipment for the electric power industry; this is evident from the fact that the office is located at the Bergmann-Borsig plant, the most important supplier for the power industry.

As indicated above, the industries supplying equipment for the power industry were located for the most part in West Germany. The supplier plants in the Soviet Zone were almost completely dismantled. For this reason special significance is given to the development and expansion of the heavy machine-building industry during the Five-Year Plan period 1951-1955 and to branches of the electrical engineering industry which play an important role in supplying the electric power industry with machinery and equipment. It was, therefore, stated that the heavy machine-building industry was to have highest priority during 1951 and 1952. Certain plants were designated as key plants (Schwerpunktbetriebe or S-5-Betriebe) and were placed directly under the Ministry of Machine Building and Electrical Engineering. These key plants are: Bergmann-Borsig, Berlin-Wilhelmsruh; Goerlitz Machine Factory and Iron Foundry; Meerane Steam Boiler Plant; Hohenthurm Steam Boiler Plant; Henningsdorf Locomotive Construction and Electrical Goods Plant (LEW); Oberschoeneweide Transformer Factory, Berlin-Oberschoeneweide; Dresden Transformer and X-Ray Plant.

Other important supplier plants are those under the VVB EKM (Administration of People-Owned Enterprises for the Construction of Power Plant Machinery and Motors) and the VVB VEM (Administration of People-Owned Enterprises for the Construction of Electrical Machinery). Plants under the VVB EKM construct steam-generating installations, steam and water turbines, and pumps. Plants under the VVB VEM build generators, transformers, etc.

The most important of the key plants listed above is the Bergmann-Borsig plant in Berlin, which builds complete power plants and reportedly produces turbo-generators and steam-generating installations.

Following are the most important categories of power plant equipment and the plants producing them:

The average capacity of boiler-producing plants is about 30 boiler installations /per year?/, each installation having a capacity of 60 tons and 100 atmospheres gauge pressure. However, low-pressure boilers and forced-circulation boilers in relatively small dimensions are produced in larger numbers. The capacity for the construction of maximum-pressure boilers is not fully utilized because of shortages in sheets, drums, tubes, and alloyed material of satisfactory quality and in the required dimensions. Besides the key plants mentioned above, the SAG Wolf-Buckau in Magdeburg and SAG Polysius in Dessau are also engaged in the production of maximum-pressure boilers. Before 1945, SAG Wolf-Buckau had an efficient boiler-construction department; however, this department was not reconverted to the construction of boilers until 1949. The construction of boilers at the Polysius plant was not resumed until 1951. The latter plant works closely with the Wolf-Buckau plant.

Heating installations, coal crushers, dust filters, water purifiers, air and water preheaters, superheaters, and other boiler fixtures are produced in sufficient quantities at plants under the VVB EKM. Boiler feeders for high pressure and for maximum pressure are produced by the EKM Halle Pump Plant and by the former SAG, and now a people-owned enterprise, Jaeger-Flagwitz. Steam- and water-control installations, mechanical and hydraulic, are produced by Machanik Askania in Berlin-Teltow, one of the key plants.

The main plants for the construction of pipelines are the Seiffert plant in Eberswalde and the Mannesmann plant in Bitterfeld, both under the VVB EKM. These plants suffer from serious shortages of tubing.

Repairs to old-model steam turbines, produced mainly in West Germany, are done at the Bergmann-Borsig plant. The production of new steam turbines designed according to the standardized system of types set up by the Central Design Office is distributed among the following plants: Up to 5,000 kilowatts, EKM Dresden Turbine Factory (formerly, Bruckner-Kanis); Up to 15,000 kilowatts, Goerlitz Machine-Building Plant (formerly, Hanig); and over 15,000 kilowatts, Bergmann-Borsig, Berlin.

So far only one new turbine has been produced; this turbine, which has a capacity of 12,500 kilowatts, was produced by the Goerlitz Machine-Building Plant and was exhibited at the Leipzig Fair. Other steam turbines of 12,500 and 25,000 kilowatts are under construction at the Goerlitz plant and at Bergmann-Borsig. Bergmann-Borsig is also building a 50,000-kilowatt turbine. These projects are to be completed during the first half of 1953. The steel castings for the turbine casings are being produced at the Hennigsdorf Steel Mill. Steam-turbine blades are produced mainly at the Goerlitz Machine-Building Plant.

Up to now, the capacity for the construction of hydroturbines has not been fully utilized; however, the construction of this type of turbine will be intensified, since the small hydroelectric plants which up to now have been idle will again be put into operation. These turbines are to be standard models with a flow rate of 0.1-10 cubic meters per second and a hydraulic height of 3-10 meters, since these models are best suited to the Central German water conditions.

Generators are constructed at the Bergmann-Borsig plant and at the Hennigsdorf Locomotive Construction and Electrical Goods Plant (LEW). No significant advances have been made in the production of generators because of a critical shortage of skilled workers.

The most important plants for the construction of transformers, including current transformers and instrument transformers, as well as oil switches and autopneumatic circuit breakers, are the Oberschoeneweide Transformer Factory in Berlin-Oberschoeneweide and the Dresden Transformer Factory (formerly Koch and Sterzel). It is especially noteworthy that the Oberschoeneweide Transformer Factory has a high-tension research institute with a high-capacity testing area for making short circuit tests up to 4 million volts. These installations are located in a machine shed of the former Obersyrea Power Plant.

Electric cables and lines of all types constitute a bottleneck in the Soviet Zone; this bottleneck is caused by shortages in the supply of raw materials.

Investments in the heavy machine-building industry are far below plans, and hence there is a lag in production. Since the actual production of power machinery is considerably below the planned figures, the electric power industry does not receive all the equipment it needs. These shortages have been aggravated by higher reparations deliveries ordered by Soviet officials; much of this equipment goes to Poland, which also must expand its power industry. Because of the existing shortages of machine tools, materials, and skilled workers in the Soviet Zone, it cannot be expected that increased expansions will enable the supplier industries to provide enough equipment and material for the electric power industry during the current Five-Year Plan period.

Annex I

Power Plant Capacities and Power Production in the Soviet Zone (1936 - 1955)

(Power plant capacities in megawatts; power production in millions of kilowatt-hours.)

Year		Installed Power Plant Capacity	Effective Power Plant Capacity	Production of Electric Power
1936	Actual	4,500 - 5,000	4,000	13,500
1939	Actual	7,100	-	21,500
1944	Actual	8,130	7,000	-
1945	Actual	-	-	6,400
1946	Actual	-	-	11,100
1947	Actual	4,000 - 4,400	2,500	13,300

Year		Installed Power Plant Capacity	Effective Power Plant Capacity	Production of Electric Power
1948	Actual	-	2,400	15,400
1949	Actual	-	2,900	17,300
1950	Actual	-	3,300	18,800
1951	Planned	-	-	21,217
1951	Actual	4,719	3,810	21,326
1952	Planned	-	-	23,462
1952	Actual	4,794	4,120	23,100 *
1955	Planned**	7,000 - 7,500	6,500	33,414

* As of 30 September 1952 the production of electric power amounted to 16,888,000,000 kilowatt-hours. The production for the remainder of the year has been estimated on the basis of available information.

** The figures for the production of electric power in 1955 were set forth in the Five Year Plan Law of 1 November 1951. The figures for the installed and effective capacities of power plants were estimated to be the minimum required for an average operating period of 5,000 hours per year.

Annex II

Installed Capacity of Machinery (in megawatts) as of the End of 1952

	Mecklenburg	Brandenburg	Sachsen	Sachsen-Anhalt	Thuringen	Berlin	Total
SAG plants	-	22	288	427	-	-	737
Mining plants	-	130	318	454	117	-	1,019
Other industry	16	25	230	612	162	-	1,045
Public plants	52	243	428	655	289	326	1,993
Total	68	420	1,264	2,148	568	326	4,794

The Number of Plants as of the End of 1952

	Mecklenburg	Brandenburg	Sachsen	Sachsen-Anhalt	Thuringen	Berlin	Total
SAG plants	-	1	1	4	-	-	6
Mining plants	-	22	21	35	14	-	92
Other industry	13	26	582	265	232	-	1,118
Public plants	14	23	32	41	77	2	189
Total	27	72	636	345	323	2	1,405

Annex III

Power Consumption in the Soviet Zone by Authorized Consumers in 1952

(in billions of kilowatt-hours)

Consumer Group	
Chemical Industry	3.81
Mining	3.52
Fuel Industry	2.72
Power plants' own requirements, and losses	2.29
Other industries and businesses	3.94
Occupation Force	1.92
Transportation and Public Services	1.68
Agriculture	0.81
Domestic consumers	2.41
Total	23.10

Power consumption figures are based on actual distribution during the first three quarters of 195% and on the planned distribution. Only slight changes in these figures will be made during the remainder of the year.

Annex IV

Agencies Responsible for Interregional Power Supply

1. The present organization of people-owned power plants in the Soviet Zone:

Administrative office: the independent State Secretariat for Coal and Power, Berlin W 8, Leipzigerstrasse 5-7.

Power Districts	Supply Regions
Central district, Berlin W8, Friedrichstrasse 194/99	Brandenburg
East district, Dresden N 24, Bayrischer Platz 2/6	Sachsen
West district, Halle/Saale, Grosse Steinstrasse 74	Sachsen-Anhalt
South district, Weimar, Stalinstrasse 13	Thueringen
North district, Rostock, St. Georgplatz 6/7	Mecklenburg

2. Interregional power supply enterprises prior to 1945 serving approximately the same regions as above:

Firm	Ownership
Elektrowerke AG	Vlag. Reich property. 100-percent public-owned
ASW AG Saechsische Werke	Land Sachsen. 100-percent public-owned
ESAG Elektrizitaetswerk Sachsen-Anhalt AG	Province Sachsen. Land Anhalt. Elektrowerke AG (see above) German Continental Gas Company. Predominantly public-owned.
Thueringen Werk AG	Land Thueringen. ASW Saechsische Werke (see above) Preussische Elektrizitaets AG. 100-percent public-owned
MEW Maerkisches Elektrizitaetswerk AG	Province Brandenburg, Province Pommern. Land Mecklenburg. 100-percent public-owned.

Annex V

The Most Important Power-Producing Plants in the Soviet Zone and Their Capacities

(as of the end of 1952)

Plant	Installed Capacity (in megawatts)
Boehlen, Sachsen	196.8
Espenhain, Sachsen (SAG)	288.0
Deuben Coal Plant, Sachsen-Anhalt	63.62
Concordia Coal Plant, Sachsen-Anhalt	49.3
Emanuel Coal Plant, Sachsen-Anhalt	37.2
Bitterfeld Chemical Plant, Sachsen-Anhalt	218.0
Troeglitz Gasoline Plant, Sachsen-Anhalt (SAG)	68.7
Wolfen Film Factory, Sachsen-Anhalt (SAG)	67.2
Wolfen Dye Works, Sachsen-Anhalt	41.3
Schkopau, Sachsen-Anhalt (SAG)	192.7
Leuna, Sachsen-Anhalt (SAG)	98.2
Heiligenrode Potash Works, Thueringen	9.8
Kaiserroda Potash Works, Thueringen	48.6

Plant	Installed Capacity (in megawatts)
Bismarckhall Potash Works, Thueringen	4.6
Bleicheroda Potash Works, Thueringen	9.4
Volkeroda Potash Works, Thueringen	5.2
Sollstedt Potash Works, Thueringen	2.9
Schwarzheide Hydrogenation Plant, Brandenburg (SAG)	22.0
Klingenberg, Berlin	248.0
Rummelsburg, Berlin	78.0
Steam Power Plant at Finkenheerd near Frankfurt/Oder, Brandenburg	78
Lauta Steam Power Plant, Brandenburg	85
Dresden Plant Directorate, Fritz Heckert Platz 7, Sachsen Dresden Power Plant Dresden-Albertstadt Power Plant	126
Hirschfelde Plant Directorate, Sachsen Hirschfelde Large-Scale Power Plant Zittau Power Plant, Grottauerstrasse (main plant, 137.7 megawatts) Zittau Power Plant, secondary plant	160
Leipzig Plant Directorate, Martin Luther Ring 13, Sachsen Dimitroff Power Plant, Leipzig Ernst Thaelmann Power Plant, Leipzig Leipzig Lindenau Power Plant Kulkwitz Power Plant	135
Pulsnitz Power Plant, Sachsen	26
Oelsnitz Power Plant, Sachsen	18
Power Plant at Schweinsburg near Zwickau, Sachsen	21
Glauchau Power Plant, Sachsen	34
Magdeburg Power Plant, Magdeburg-Rothensee, August Bebel-Damm Sachsen Anhalt	45
Zschornewitz Power Plant, Sachsen-Anhalt	174.5
Power Plant at Harbke near Eisleben, Sachsen-Anhalt	141.5
Large-Scale Gas Plant at Magdeburg-Rothensee, Osseeistrasse 1	53
Dessau-Alten Power Plant, Sachsen-Anhalt	12
Torgau Power Plant, Sachsen-Anhalt	38

Plant	Installed Capacity (in megawatts)
Doebritzschen Power Plant, Sachsen-Anhalt	24
Breitungen Power Plant, Thueringen	50
Gispersleben Power Plant, Thueringen	33.4
Werra Power Plant, Erfurt, Radowitzstrasse 30/31	41
Muehlhausen Diesel Power Plant, Thueringen	25
Jena Plant Directorate Apolda Power Plant, Heidenbergstrasse	12
Unterpreilipp Power Plant, Thueringen	30
Bleiloch Hydroelectric Power Plant at Hohenwarte near Ziehenrueck	40

Annex VI

Plant Managements

The functions of the plant managements are maintenance of the network and control of the distribution of power. These offices are subordinate to the power districts. The former names of the plant managements are given in parentheses.

Babelsberg Plant Management, Potsdam-Babelsberg, Glasmeisterstrasse 10-22.

Calau Plant Management (Calau Power Plant for the Overland Network), Brandenburg.

Eberswalde Plant Management MEW, Ernst Thaelmann Strasse 25.

Falkensee Plant Management, Kreis Osthavelland, Stalinstrasse 1 (MEW Spandau).

Neubrandenburg Plant Management, Ihlenfelderstrasse 88 (MEW).

Stralsund Plant Management (MEW), Frankenkronwerk 2/ Mecklenburg.

Dessau High-Tension Network, Puschkinallee 49 (Elektrowerke AG, Berlin, West District management, Dessau).

Schwerin Plant Management (MEW), Obotritenring 40.

Salzwedel Plant Management, Sachsen-Anhalt (Landelektrizitaet GmbH, Salzwedel Overland Network Plant).

Gardelegen Plant Management, Sachsen-Anhalt, Letzlinger Landstrasse 5/7 (Landelektrizitaet GmbH, Gardelegen Overland Network Plant, and Overland Network Plant for Kreis Jerichow II GmbH).

Boerde Plant Management, Magdeburg, Stresemannstrasse 21, Sachsen-Anhalt (Landelektrizitaet GmbH, Boerde and Weferlingen Overland Network Plant).

Blankenburg Plant Management, Neue Halverstaedterstrasse 17, Sachsen-Anhalt (Landelektrizitaet GmbH, Derenburg Overland Network Plant, German Continental Gas Company, and Ilfeld/Blankenburg Electricity Supply).

Quedlinburg Plant Management, Bansistrasse 8, Sachsen-Anhalt (Crottorf Elektrizitaetswerk AG and the Ostharz Power Plant for the Overland Network).

Schoenebeck/Elbe Plant Management, Karl Marx Strasse 18, Sachsen-Anhalt (Central Sachsen Gas and Power Supply AG and Magdeburg Southeast Gas and Power Supply AG).

Dessau Plant Management, Kuehnauerstrasse 146, Sachsen-Anhalt (German Continental Gas Company, Dessau Power Plant).

Klostermansfeld Plant Management, Sachsen-Anhalt (Power Supply Corporation for the Mansfeld Mining District, Landelektrizitaet GmbH, and the Bretleben Overland Network Plant in Artern).

Bitterfeld Plant Management, Halle/Saale, Bernburgerstrasse 12/13 (Landelektrizitaets GmbH, Saalkreis Bitterfeld Overland Network Plant, and the Elektrizitaetswerk).

Falkenberg Plant Management, Muehlbergstrasse 4, Sachsen-Anhalt (Landelektrizitaet GmbH, Liebenwerda Overland Network Plant in Falkenberg).

Zeitz Plant Management, Donalisstrasse 7, Sachsen-Anhalt (Weissenfels-Zeitz Power Supply Corporation, Landelektrizitaet GmbH, Camburg Overland Network Plant, Kulkwitz Land Power Works AG, Stoebnitz Plant Office).

Power Plants at the Saale Dams, Hohenwarte/Post Eichicht/Saale/ Thueringen (Saale River Dams Corporation, Weimar).

Werra Power Plants, Mihla/Werra, Muehlgasse 11/13, Thueringen (Thueringenwerk AG).

Bleicherode Plant Management, Thueringen (Suedharz Power Plant for the Overland Network GmbH).

Gotha Plant Management, Bahnhofstrasse 20 (Thueringen Light and Power Works AG).

Gera Plant Management, Fridericistrasse 6 (Gera Power Plant and Street Railway).

Gispersleben Plant Management, Thueringen (Thueringen Power Plant AG, Gispersleben).

Jena Plant Management, Dornburgerstrasse 17 (Jenaer Elektrizitaetswerke AG).

Meiningen Plant Management, Thueringen (South Thueringen Overland Network Plant in Ilmfeld).

Annex VII

Repair Plants

The following repair plants for the Soviet Zone electric power industry are subordinate to the Main Administration for Power in the State Secretariat for Coal and Power.

Plants	Type of Work
Griessen Hydroelectric Plant, Brandenburg (Calau Overland Power Station)	
Transformer Repair Shop at Hauen in Kreis Osthavelland, Am Schlangenhorst 11-13 (MEW Transformer Shop at Hauen)	Mainly transformer repair work
Oranienburg Meter Repair Shop at Heidelberger-strasse 32 in Berlin, Brandenburg (MEW Meter Shop in Oranienburg)	Repair work
Thuegina Plant Administration, Leipzig C 1, Bitterfelderstrasse 19, Sachsen (Thuegina, Installations Department of the Thueringen Gas Company)	Assembly work and repair work
Elbe Repair Plant, Vockerode, Sachsen-Anhalt (Elektrowerke AG, Berlin, Elbe Power Plant)	Mainly repairs to boiler installations
Halle-Bueschdorf Repair Plant, Aeussere Delitzscherstrasse 17-18, Sachen-Anhalt (Landelektrizitaets GmbH, Bueschdorf Factory)	Repairs to transformers and switch installations
Dessau-Waldersee Repair Plant, Sachsen-Anhalt (German Continental Gas Company, Dessau-Anhalt Power Plant)	Repair work
Erfurt Repair Plant, Stalinallee 197, Thueringen (Repair Department of the Thueringenwerk AG in Erfurt)	Mainly generator repair work

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